

Final Report

**A New Approach
For Protecting Endangered Orangutans
and Their Habitat Through Community
and Local Government Participation**



The Nature Conservancy

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I. EXECUTIVE SUMMARY

USAID has awarded The Nature Conservancy a total of \$935,503 to identify and then assist in protecting orangutan habitat in East Kalimantan. After almost two years of field surveys, the Conservancy was able to document a large population of orangutans with an estimated total number of 2,500 individuals (range 1,700 – 3,100) in an area that many experts had assumed orangutans had been extirpated. Furthermore, habitat quality was accessed throughout all of East Kalimantan and the area that borders Berau and East Kutai (ex-Gruti and Gunung Gajah concessions) was determined to be the last large intact habitat left in the province.

During the last three years, the Conservancy has facilitated the establishment of two locally-managed protected areas and has been negotiating with the shareholders of the Gunung Gajah concession to set aside approximately 20,000 ha free from further logging. The two protected areas are summarized below and also includes the Gunung Gajah concession.

- *Wahea Conservation Area* (38,000 ha). Ex-timber concession (Gruti) that lost its license and was recently designated by East Kutai district government as protected forest (*hutan lindung*) and proclaimed in a large Dayak ceremony witnessed by local government as an indigenous forest (*hutan adat*). A management council made up of the Provincial Forestry University, East Kutai government officials, *KSDA* office and TNC has been formed. There are no communities in the immediate area but nearby ones will be part of a collaborative management structure to be formed early in 2005.
- *Lesan River area* (12,000 ha core area). Decree by the Regent of Berau District that designated the area as an orangutan refuge and classified in the new ten-year land use plan as protected forest with special status as an orangutan refuge. A management council has been formed that includes the district forestry office as lead with elected representatives from the surrounding communities as council members.
- *Gunung Gajah concession* (84,000 ha with 20,000 ha identified as critical orangutan habitat). Active timber concession that overlaps high quality orangutan habitat in northern portion of concession. Formed partnership with Sumalindo Forest Industries to provide them the financing to buy the majority shares in Gunung Gajah. One of Sumalindo's concessions has recently earned FSC certification and they have demonstrated a high commitment to both conservation and sustainable forest management. After buying the Gunung Gajah concession, have agreed to reduce Sumalindo's debt if they set aside the 20,000 ha in conservation area.

II. INTRODUCTION

In August 2001, the Nature Conservancy (TNC) submitted a two-year grant proposal for to begin conservation efforts aimed at protecting the last extensive orangutan habitat in East Kalimantan. The approach that we outlined was to work with the key resource users – local communities, forest industry, and local government – to provide them with sufficient benefits and/or raise the level of the intangible benefits from conservation so that they actively engage in conservation. Given that the Conservancy documented a large population of orangutans where most experts hadn't expected to find them, and rapid progress working with our local government partners, we submitted a follow up one-year grant proposal, which was approved. From USAID's total investment of \$935,503, the Conservancy has been successful in establishing two locally managed protected areas for orangutans. Both of these protected areas have strong local government support and active participation from relevant government offices and the nearby communities. Additionally, the Conservancy has been able to leverage USAID support to bring in more donors, such as the Sall Foundation, which has provided an additional \$1.2 million. This final report examines the progress made toward achieving the original objectives and milestones, outlines lessons learned, and finally draws some conclusions.

III. COMPARISON OF ACTUAL ACCOMPLISHMENTS WITH PLANNED OBJECTIVES

Objective 1: Within 2 yrs. a model community conservation & mgt area (CCMA) will have been developed and partially tested

Indicators	Done
1. Accurate estimate of population and location critical habitat identified	✓
2. Majority of villagers actively support TNC program through written agreement	✓
3. Awareness of OH issues & other environmental problems measurably increased	✓
4. Village maps formally accepted by PEMDA	*
5. Trial econ. activities decided on by villagers and field trials in place	✓
6. Forest degradation reduced compared to other areas	✓

*Village borders have been formally accepted by PEMDA, but the land use planning is on-going

This objective has been met and the following sections divide the objective into technical and social sub-objectives. We are no longer using the term Community Conservation and Mgt Area, but rather have emphasized a collaborative management approach whereby a consensus on management issues among the resource users is strived for with the final decision resting with local government (see further down for a full explanation of the current management for the Lesan and Wahea Protected Forest Areas).

3.1 Further surveys to estimate population & qualify habitat

First, through an extensive orangutan survey of 350,000 ha of forest we were able to identify two orangutan habitat areas, one in East Kutai District (encompassing the ex-Gruti HPH now called Wahea Protected Forest and Gunung Gajah HPH) and the other in Berau (now referred to as the Lesan Protected Forest). We have estimated the population of orangutans to be approximately 3,000 individuals in an area that most experts thought no longer harbored a significant population. The Conservancy has disseminated information about the size and importance of these two orangutan populations to local, provincial, and national government

authorities through ten major workshops and presentations. Additionally, more than 30 articles about this area have appeared in Indonesian and English language newspapers including the Washington Post and New York Times. In 2003, National Public Radio (NPR) nationally broadcast a radio expedition about the newly documented large orangutan population, which was later followed by CNN and BBC news programs.

For long-term research purposes, in the Lesan Forest we created a grid trail system that encompasses 1,600 ha. Distances are marked accurately along a series of trails that facilitate orangutan research and biodiversity surveys. The Kalimantan Program also developed a research agreement with Dr. Roberto Delgado from Hunter College CUNY and he and his students will carry out ecological and behavior research on orangutans. Also, by June of this year, we will build a guard and research station (with non-USG funds) on the banks of the Lesan River. Even though funds have been in hand, we have postponed the construction until a community structure is in place that widely supports this station and guard post.

3.2 Create enabling environment at the village level

This sub-objective has been accomplished by Conservancy led programs on health, clean water, village mapping, and in partnership with World Education (WE) agricultural extension. Besides the village mapping activities and WE's agriculture program, all the above activities have been supported with private funding; thus, leveraging USAID funds at more than a one to one rate.

The upper watershed of the Kelay River is almost exclusively inhabited by Punan Dayaks, who just 40 – 50 years ago, were forest nomads. Their agricultural system is primitive and comprises dry-land rice farming using slash and burn with a rotation of approximately five years in fallow. Actually less than 1% of the upper Kelay Watershed area is cultivated. This low percentage doesn't represent a significant deforestation threat. However, high periodic sediment loads from barren soil post-burning of the slash could be problematic and WE has addressed this by encouraging nitrogen fixing cover crops that quickly cover the area, reducing rainfall runoff. The most significant threat from the Punan is from hunting of orangutans for bushmeat. The Punan have practically extirpated orangutans in the forest extending up to 10 km south of the upper Kelay River. Our field surveys indicate that the forest provides adequate orangutan habitat and if hunting ceases and the forest is conserved, the orangutan population should recover. For that reason, we negotiated and signed conservation agreements with the six Punan villages that include a commitment to not hunt orangutans. In contrast to the upper Kelay River, bushmeat hunting of orangutans on the Lesan River appears not to be a problem and the Lesan Dayak communities are not Punan and don't appear to target primates in general when hunting as evidence by the large number of macaques, proboscis monkeys, and red leaf monkeys seen on the banks of the Lesan River.

Much of the environmental degradation and forest destruction has come about through outside parties such as forest concessionaires and gold miners extracting timber, gold and *gaharu* (eagle wood) using unsustainable, high impact methods without the free and informed consent of the Punan. Since these villages are remote and the Punan are marginalized one of our key strategies has been to facilitate an inter-village forum to improve their bargaining and lobbying position with concessionaires and local government.

3.3 Building Community Organizations

In accordance with the our proposal, we have allocated USAID funds toward building more cohesive community organizations in three separate areas, the upper Kelay watershed, the Lesan watershed, and in East Kutai District for the recently created Wahea Protected Forest. The latter two areas were not listed in the original proposal since we only began to focus on these locations after identifying the most critical orangutan habitat.

3.3.1 Upper Kelay Villages

Our long-term goal for this area is to conserve the forests in perpetuity by promoting sustainable natural resource practices and increasing the importance of the intangible ecosystem benefits from this critically important watershed. The Conservancy facilitated the formation of an inter-village forum for the six communities restricted to the upper watershed area. Monthly meetings are now held and the Forum is divided into sections composed of health/clean water, HPH relations, alternative livelihoods, and development. Forum members have been active in most TNC activities on the Kelay including participatory mapping of village borders and village land use planning. Furthermore, with our assistance, four of the six Kelay villages are creating village laws related to natural resource use and the prohibition of logging without permits and forum members have helped to organize and participate in the training. The Conservancy has carried out four specific trainings for the Forum, including communications, financial record keeping, small grants proposal writing, and drafting village legislation. However, the Forum needs to be strengthened considerably so that it becomes an effective negotiating body with the concessionaires, and some of the current USAID grant will goes toward this task. We also plan to undertake a study tour of the Segah and the Badan Pengelola there for the Forum members in order to show them how collaborative management has resolved conflict and increased livelihoods.

The Conservancy has two Community Conservation Officers permanently assigned to the Kelay, one located in Long Gi where we've built a community outreach post and the second based in Long Sului, the upper most village. TNC's Kelay Coordinator spends much of his time in these villages and regularly meets with the Forum and the Kelay Camat.

3.3.2 Lesan Villages

The boundaries of four villages overlap with the recently created Lesan Protected Forest – Muara Lesan, Lesan Dayak, Sido Bangan, and Merapun. We have located two Community Conservation Officers in these communities and they are facilitating the creation of an inter-village organization that will be partially modeled on the *Badan Pelaksana* in Sungai Wain. A *Badan Pengelola* (Management Board) was created and formalized by the Bupati and community representatives sit on the Board. We organized a study tour in December for village leaders, the Camat, and the Badan Pengelola members to visit Sungai Wain in order to exchange lessons learned. Gabriella Fredriksson will be assisting to carryout out a participatory conservation planning exercise in May for the Lesan. One important milestone that we will accomplish this year is to negotiate and sign conservation agreements with the four villages that commit them not participate in illegal logging activities.

3.3.3. Wahau Villages, East Kutai District

The objective in this area is to establish a collaboratively managed local protected area that is formally recognized by the national government and has the mandate to conserve 18,000 ha of critical orangutan habitat. This area is relatively remote with the nearest villages about 35-40 km away, but nevertheless historically they have utilized the identified critical orangutan habitat area for hunting and prior settlements. A forestry concession (Gruti III) had operated

there for about ten years, but is no longer active and formally lost their license in 2004. The East Kutai district government has recently designated the area as Protected Forest (*kawasan lindung*) in its new 10-year land-use plan and the East Kutai Bupati formally requested from the Minister of Forestry a change of status from production to protection forest.

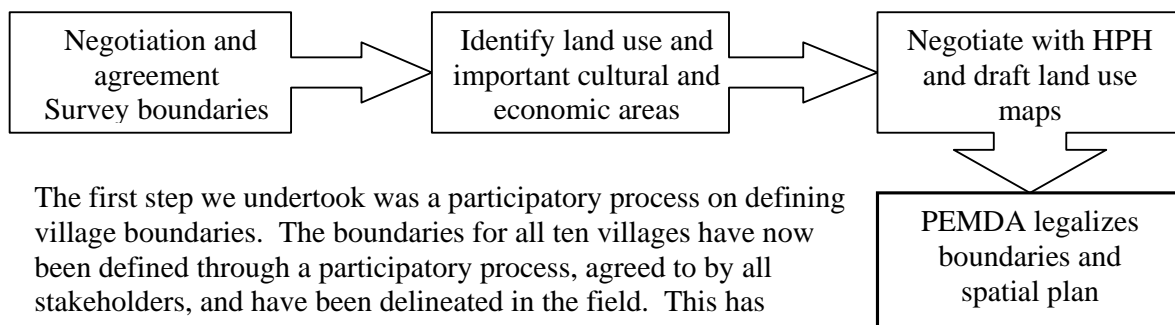
In October 2004, about 100 local Dayak elders from three tribes met in the core zone of the concession area and, with the endorsement of the district government, declared the area Traditional Indigenous Forest (*hutan adat*). This designation formally recognizes the indigenous communities' rights as a key participant in managing and protecting this area. The Dayak elders named the area "*Wahea*" meaning "land between the rivers". The Dayak communities, the provincial university (Mularwarman University), the Provincial Conservation Office (*KSDA*), and the district government are key members of a collaborative-management board. Outside of the core area, community-based resource extraction is planned at sustainable levels. This initiative is supported by the East Kalimantan Governor, the Regent of East Kutai, the Legislature of East Kutai, the Head of Provincial Forestry Office and many other officials.

We have added two permanent staff assigned to East Kutai, a Coordinator and Conservation Officer (please see revised organizational charts in appendix) and the Dinas Lingkungan Hidup (LH) has provided space for a TNC office in Sanggatta. By May of this year, we will hire a Community Conservation Officer to be assigned at Miel Baru village (the closest village) and he/she will also work with three other nearby villages.

3.4 Define and delineate community land use plans (Upper Kelay)

Our objective with developing community land use plans is to promote conservation directly at the village level by identifying socially and ecologically important sites that should be excluded from logging or other high impact extraction of natural resources. The secondary objective is that this process should empower the local communities by directly involving them in long-term development planning, and one outcome would be that conflict with concessionaires would be avoided since the concessionaires have participated and agreed on the final results and signed the land use maps.

Figure 1. Flow chart of the major steps in the village spatial planning process



The first step we undertook was a participatory process on defining village boundaries. The boundaries for all ten villages have now been defined through a participatory process, agreed to by all stakeholders, and have been delineated in the field. This has greatly reduced conflict among communities over natural resource use and during negotiations with timber concessions. However, village spatial planning has been slower than anticipated mainly due to the difficulty of involving the concessionaires. We began the spatial planning in Long Pelay and have invited the Wanabhakti concession manager and staff to participate in community meetings related to spatial planning (see Appendix for latest

Figure 1. Flow chart of major steps in village land use planning process

draft map). However, this process was put on hold when the concession manager was arrested and spent four months in jail on illegal logging charges. We have since focused on Long Duhung and have been working with Mahardika, who appears to be more open to negotiating village land use planning.

3.5 Initialize Compatible Economic Development program

Rattan was collected on the Kelay Watershed from the 1980s until the late 1990s, but the price fell drastically making it no longer financially attractive. Results from a Conservancy feasibility study on rattan indicated that with recently higher prices (approximately Rp3,500/kg) this NTFP has potential to generate additional income for a wide segment of the upper Kelay communities, and that there should be sufficient quantities to make it worthwhile. In the latter part of 2004, we facilitated the formation of a NTFP Cooperative starting in Long Gi, now with 33 members and have assisted the Cooperative to request a rattan shipping permit from the Berau Forestry Office. In September of 2004, we began discussions with SHK – Kaltim, a local NGO focused on marketing NTFP, to explore if we could partner with them. Since then a MoU has been developed between TNC and the business arm of SHK and we anticipate the first shipment of rattan to take place in late April or early May. Our plans are to hire an expert on cooperatives and other community organizations that can provide long-term support for the Kelay Cooperative. The NTFP Cooperative also collects wild honey and we have provided substantial assistance in packaging and marketing this product in Jakarta. To date the Cooperative has produced 130 liters and has firm orders for 1,000 liters from a distributor in Jakarta.

We've also organized and carried out a study tour for Segah and Kelay villagers to West Kutai to learn about cultivating the rattan species 'pulit merah'. This species doesn't normally occur on the Kelay, but shows real promise and should be able to be cultivated in fallow areas. Farmers with experience in planting and cultivating pulit merah rattan will be contracted to provide training to the Segah and Kelay communities in 'demo plots' in late March.

The Conservancy also developed and tested a revolving loan fund in Long Gi and Lesan Dayak. In Long Gi, three loans were given out by the Loan Committee there with one group having returned 50% of the loan up until this report. The other two groups have requested more time to pay back their loans. This activity has consumed an inordinate amount of staff time and for the rest of the communities, we are attempting to interest a NGO which specializes in establishing credit unions.

3.6 Monitoring & Evaluation

3.6.1 Social Economic Surveys

Results from the socio-economic surveys carried out in 2002 and 2004 indicate that average monthly income increased 5% from Rp 433,590 to Rp 452,710 over two years. Since our compatible economic development activities only began in 2004 and have been mostly restricted to Long Gi village, these results aren't surprising. However, we do anticipate that the increase over the next two years will be greater given that the Kelay Cooperative is now established and selling honey at much increased prices and cooperative membership will be expanded to the other five upper Kelay villages.

One result of the socio-economic survey that will need further monitoring is the steep rise in average hectares cultivated for dry-land rice farming, increasing 112% from 0.77ha to 1.6ha

per head of household. Average fruit garden size also increased by 123% and both of these increases can partially be explained by World Education's focus on agricultural extension activities that have motivated villagers to plant more of their fallow lands.

Concerning villager awareness about orangutans, in 2002, 70% of the survey respondents knew that orangutans were protected by law and couldn't be hunted. In 2004, the percentage rose to 74% of respondents knowing that orangutans are protected species. Additionally, survey respondents indicated that the species they hunt the most are bearded pigs and several deer species and only one respondent in 2002 answered that he had hunted an orangutan.

3.6.2 Land Use Change Analysis

We carried out two different satellite image-based analyzes examining deforestation rates, a more detailed analysis comparing 1997 Landsat images with 2003 specifically for the Kelay Ecoregional site, and a 2000 – 2004 East Kalimantan-wide analysis applying MODIS imagery with a 500 meter resolution. According to our latter analysis, East Kalimantan lost 1.48 million ha of lowland forest (0-400 m) over the past four years, an astounding 26 percent of its lowland forest (D. Fuller, 2005). A more detailed analysis restricted to the Kelay site revealed that of the total 204,000 ha, 46% was classified as lowland forest and from 1997 until 2003 roughly 4,500 ha or about 5% of the lowland forest has been deforested or converted to forest plantation (Table 1). Time series analysis of yearly satellite images suggests that much of the deforestation happened from 1997 until 2001. The 5% rate is substantially below the overall lowland deforestation rate of 26%, and may be partially explained by the Conservancy's efforts at raising the level of importance for the eco-system functions provided by this critical watershed. We know of at least three major oil palm proposals for this area that have not been approved by PEMDA Berau due to our efforts at raising the level of importance of the Kelay area as a critical watershed.

Yet further examining Table 1 also indicates that an additional 19,000 ha of forest was classified as highly degraded for this same time period. Almost all of the forest degradation has occurred in the timber concessions with PT Karya Lestari showing the highest levels of degradation. In an illegal logging report sponsored by the Conservancy covering Berau, PT Karya Lestari was listed as one of the worst concessions and cutting outside their annual compartments was one of many infractions observed (Obidzinski K and Andrianto A. 2004). Thus, while the Conservancy can claim that its conservation efforts have been effective in substantially slowing the deforestation rate, we have not been successful in reducing the high impact from these concessions.

Table 1 Land use change analysis from 1997 through 2003 for TNC's upper Kelay Watershed site (source: Landsat 1997 and 2003 imagery)

Class	1997 (Ha)	2003 (Ha)	Change (Ha)	Percent change
Deforested Land	2,377	3,412	1,735	73
Forest Plantation	3,125	6,450	2,744	106
Highly Degraded Forest	22,960	42,329	19,151	84
Slightly Degraded Forest	26,643	11,291	-15,178	84
Virgin Forest	149,006	140,630	-8,451	6
Grand Total	204,113	204,113		

Objective 2: Within 2yrs., at least 2 HPHs will have modified their mgt practices w/ specific recommendations for protecting orangutans and their habitat

Indicators	Done
1. Reduced fire incidence compared to other areas	✓
2. Special recognition given to HPH that commits to managing orangutan habitat	

As mentioned in the discussion of the previous objective, about 10 percent of the forest in the Kelay site has been highly degraded from destructive timber harvesting and road building, thus confirming that these concessions represent a significant threat to forest intactness. These logged over forests will fully recover if left alone; the problem is that these areas now serve as justification for conversion to industrial estate plantations.

In April 2003, the Tropical Forest Trust and TNC carried out an assessment to gauge the gaps in meeting FSC certification on the Gunung Gajah Abadi (GGA) concession. A report was written and the results were presented to the Board of Directors, including an action plan for meeting FSC standards. Several more meetings took place with Gunung Gajah Board of Directors, including two meetings with the President Director of Kiani Group, one of the major shareholders in GGA.

Results of the orangutan survey suggested that some of the highest densities of orangutans occurred in the GGA concession and an overlap of roughly 20,000ha of critical orangutan habitat was identified. Our strategy originally in protecting this habitat from further logging was to compensate the concessionaire for the market value of the standing timber in return for a commitment to not log the area. With the Kiani Group shareholders, they were in agreement with the concept, however, the GGA Board of Directors didn't approve it, and thus it lingered for quite some time, despite repeated meetings. In early 2004, the Kiani shares were purchased by a business group headed by formal army generals, Prabowo and Luhut, and we met their representatives several times and gained support for the concept. Unfortunately, the Prabowo/Luhut group sold their shares six months later to a local Samarinda business group headed by Pak Abun. Given that Pak Abun appointed a Director of Production (Pak Said) from the Partai Pemuda Pancasila that has been implicated in illegal logging including his name appearing on the official 'black list' from Dephut, we decided the only way forward was to arrange financing for Sumalindo to buy all the shares in GGA.

Sumalindo would hold the license for GGA and the Conservancy is exploring two options with financing the purchase. The first option is to piggy back on to a proposed loan from the International Finance Corporation (IFC) to Hasko Group. Hasko is the parent company of Sumalindo and has applied for a multi-million dollar loan for updating equipment in their mills. The Conservancy would guarantee the GGA loan and would partially pay off the loan after the 20,000 ha of Critical Habitat has been approved as an internal conservation area by Dephut. The advantage in having IFC provide the loan is that obtaining a Global Environment Facility (GEF) grant is much easier if there is an IFC component to the proposal, as is the case with the Conservancy's joint venture in Komodo NP. The second option is that TNC provide the loan directly to Sumalindo for the purchase of the shares. The Kalimantan Program would request a loan from the Conservancy's Land Preservation Fund and the loan would be paid back through donations from a major capital campaign. Sumalindo has agreed to this concept and we will soon be meeting with the current shareholders to gauge their willingness to sell.

In regards to the indicators listed in the work plan, in three years, there have been no hot spots that led to large wildfires on the upper Kelay. Though, for the most part, Objective 2 has not been met due to the intransigence of the concessionaires. These Kelay River concessions operate at the fringe of the law, especially PT Karya Lestari and PT Wanabhakti, both having been fined for infractions or convicted for illegal logging. Krystof and Andrianto (2004) cite the following in their illegal logging report:

Logging where it is not supposed to is not something new to PT Karya Lestari. In 2003, the company's logging contractor intruded into the Protection Forest area between the Kelay and Gie Rivers. The case has been investigated by District Forestry authorities and Police. The company was supposed to pay a Rp 2 billion fine. However, the fine has not been paid yet as negotiations continue.

We are now working mostly with PT Mardhika who has been more open and willing to collaborate with the Conservancy. Additionally, Mardhika's concession boundaries are adjacent to the Lesan Protected Forest, raising this concession's level of importance further. We have met several times with Mardhika's manager in Berau about reaching an agreement for the area that borders the Lesan Forest and anticipate reaching an agreement in 2005.

Objective 3: Within 2 yrs, Berau govt will have sufficiently received training to make NRM decisions in a transparent manner that consider conservation aspects.

Indicators	Done
1. NRM knowledge increased	✓
2. Formal recognition of village maps	*
3. Inclusion of OH conservation area in spatial plan	✓

*Village boundaries have been formally recognized, but the village land use plans are being finalized.

The Conservancy has focused on increasing capacity and knowledge about natural resource management with the Agency for Regional Development (BAPEDA) and then later with the District Forestry Office (*Dishut*) in Berau. Instead of only organizing a series of short courses for these two agencies, we decided to also allocate (seconded) one GIS expert staff to spend 50% of his time working directly in the BAPEDA Office. This arrangement was appreciated by Berau government since the benefit from TNC's presence was easy to see. Our most significant milestone with this objective is Berau's ten year spatial plan that incorporated 80% of TNC's Ecoregional Planning priority sites into protected or limited production forest status. The Lesan Area was classified as protected forest with special recognition as orangutan habitat. For the first time, the spatial planning process took into account wide public consultation, and 24% of the district is now classed as protected forest. The next step is for provincial government to synergize the spatial plan they are currently developing with Berau's ten-year plan and TNC is playing a facilitating role.

In total, the Conservancy has organized 19 separate training events over the last three years, including site conservation planning, incorporating conservation in spatial planning, conflict resolution, three GIS courses, diagnostic sampling in timber concessions, study tour to evaluate oil palm plantations, web site design, non-formal methods for teaching

environmental education, economic valuation of natural resources, participatory village mapping, among others.

In East Kutai where we began working there directly in early 2004, and have been successful in having the Wahea area (ex-Gruti concession) classified as protected forest in their newest ten-year spatial plan. The Bupati issued a decree recognizing the conservation importance of the Wahea and formally created a Management Council.

For the Lesan Orangutan Area, the Conservancy facilitated the formation of a *Badan Pengelola* (Management Council) that consist of representatives from local govt agencies, community leaders, and the Provincial Protected Areas Office (BKSDA), that will be responsible for the long-term management of the Lesan area. The Bupati officially recognized and legitimized this Council in a decree signed in early October.

In both orangutan areas – Wahea and Lesan – the Conservancy facilitated the establishment of Management Councils that are inclusive, participatory with transparent discussion making. Our next steps will be to strengthen these Councils and help establish a foundation that in the long-term will manage a trust fund for these areas. Thus, in conclusion, this objective has been met.

IV. FINDINGS FROM RESEARCH AND EVALUATIONS

4.1 Review and Assessment for East Kalimantan Program

During January 2004, the Conservancy carried out a major evaluation of the East Kalimantan Program with an independent and multi-disciplinary team of six experts (see Appendix 4 for names and specialties). The team was charged with undertaking a constructively hardnosed assessment of the Program's ability and capacity to be the model by which the Conservancy can achieve tangible and lasting conservation impact in Kalimantan. The assessment was divided into five major components listed below:

- 1) the overall program design;
- 2) its alignment with the principles of Conservation by Design¹ and the recent upgraded standards for priority setting and measures;
- 3) the effectiveness of priority setting, strategy development and implementation, and measures;
- 4) the effectiveness of management, administration and organizational structure, and its ability to handle substantial and rapid growth in the near term;
- 5) the level of adoption by and/or influence that this program has had on local government.

The major findings are listed below, but in summary Bennett et al (2004) stated:

The Nature Conservancy (TNC) initiative in East Kalimantan is a *go-forward* program with impressive achievements during its start-up and rapid growth phase. This highly successful, innovative, enterprising and productive period should now lead into a second phase of consolidation and integration that will require some shifts in emphasis and effort. In other words, “to do more, do less”, at least in some areas, while intensifying support of conservation sites of the highest priority and strengthening the ecosystem connectivity inherent in the “ridge to reef” rationale. The East Kalimantan Program has the capacity and drive to face the challenges of Phase II that are the subject of the present review. This second phase is an essential springboard to a later scale-up that could reach across Kalimantan, extending the reach of TNC to saving some of the other great forest and coral places of Borneo, the last refuge of countless species assemblages and their habitats as symbolized by the orangutan as conservation flagship, keystone and umbrella species.

4.1.1 Major Findings – Setting Priorities

Major conservation priorities for East Kalimantan have been systematically set through the Eco-regional Conservation Assessment (ECA). The portfolio encompasses a unique assemblage of “ridge to reef” sites of national and global biodiversity significance. It is now appropriate to adapt the indicative ECA in a more prescriptive direction through the inclusion of elevation and connectivity parameters.

The Program's ECA has been valued by district and provincial governments as input for the development of their spatial plans. The initiative promises to be highly cost-effective. Input from participative village mapping of land use has been similarly valued by Berau, adding to the benefits that the Program is bringing to local communities in major conservation areas. It is important that the mining and forestry exploitation industries that village mapping need not

¹ TNC organization-wide principles that should apply regardless of country.

be threatening. Refining the ecological component of input to spatial plans to show connectivity between ecosystems would further strengthen the plans.

4.1.2 Major Findings – Developing Strategies

A suite of diverse strategies is being developed that supports conservation of priority sights in the ECA portfolio. While being of undeniable importance to the Program's conservation objectives, these strategies should inform other conservation practitioners, particularly the more innovative approaches such as funding and supporting conservation agreements to protect orangutan areas and collaborative management between communities and concessionaires. Bearing in mind the management challenges (see below), the broad and ambitious reach of some of these strategies requires they be focused on the highest priority conservation sites.

4.1.3 Major Findings – Collaborative Management Strategy

The Program has forged a close and generally trusting relationship with local communities, laying the foundation for joint conservation efforts. While communities have been provided with benefits they greatly value, they fail to appreciate that such benefits are contingent in the long term upon conservation success. The Program's conservation purpose is not as well understood as it should be among local communities and is quietly questioned by some of the forest concessionaires and other observers increasing the risk of spurious and damaging criticisms of the Program. Collaborative management is clearly the way forward to conserve the Segah and Kelay sites. More resources, however, need to be invested to ensure this succeeds. It is also important for the Program to understand that collaborative management can and should include different approaches in different places. The Village Forum is an important means for local communities, local government and concessionaires to enter into dialogue about their interests but still needs support to realize this potential. The Program is pioneering community-concession collaboration with relevance for conservation approaches to managing large expanses of swamp and hill forest across Kalimantan. Progress to date and prospects for success should place this strategy in a high-priority position for the Program.

4.1.4 Major Findings – Compensation and Purchasing Concession Rights

Successful outcomes for the purchase of the ex-concession and compensation to reduce logging impacts would have far-reaching impacts across Indonesia wherever natural forests are being exploited for timber. Approved by government, either could draw in substantial international support for forest conservation. There are serious risks involved for the Program. Closer relations with the Ministry of Forestry over the proposal to purchase a concession for conservation purposes must be pursued. The ramifications of both initiatives need to be more clearly articulated among stakeholders.

4.1.5 Major Findings – Certification and Legality

Support for forest certification and log tracking promises benefits not only for the Program's conservation sites but also for national goals of promoting more sustainable forest management practices. Focusing on the establishment of High Value Conservation Forests (HVCF) is an obvious TNC strength in supporting forest certification. The question of whether standards have been set unrealistically high for log tracking cannot yet be answered. The outcome of the on-going pilot tracking exercise should be compared with initiatives elsewhere. As the Program enters the critical juncture of a second phase of consolidation and integration, any new certification and log tracking initiatives should be confined to East Kalimantan.

4.1.6. Major Findings – Partner and Stakeholder Engagement

District and provincial governments are clearly willing partners in the Program, and highly appreciative of what has already been achieved, both environmentally and socially. The Program has undoubtedly raised conservation awareness among its government partners. There is a need for more formal and informal engagement, especially for supportive decision-making. Better understanding of government agency interests is also needed. It can be achieved through a comprehensive stakeholder analysis. To build on existing trust among the Program and its government partners as well as to avert suspicions from other parties, it is important for the Program to demonstrate adherence to good governance principles, namely, timely transparency, participation, accountability.

4.1.7. Major Findings – NGO Engagement

NGO and other civil society partners have been willingly and effectively engaged in the Program's activities. The small-grant's initiative was well received by NGOs but has been constrained by bureaucratic delays. The Program has fostered some inter-NGO collaboration, especially for marine conservation. Despite formal and on-the-job training and capacity-building, knowledge and capability gaps remain large for district-level NGOs. NGOs are not as involved as they should be in program development. This may lead to resentment. As is the case for government partners (see above), better understanding of NGO interests is needed.

4.1.8. Major Findings – Community Engagement

The Program has had impressive success in engaging with local community partners, more so than is typical for conservation development projects in Indonesia. Community capacity is lacking, however, reducing active participation in collaborative management with a concession in the Segah and allowing a weak link between conservation and community development support of the Program in the Kelay area. Nonetheless, the conflict-resolving attributes of the community-company arrangement in collaborative management and the empowerment value of the Village Forum in the Kelay, offer prospects for adoption of both approaches for conservation of large natural forest areas across Indonesia. As is the case for government partners (see above), better understanding of NGO interest is needed.

4.1.9. Major Findings – Administration and Management

In a relatively short amount of time, the Program has put together a highly-motivated and energetic work force for conservation, emphasizing flexibility and responsiveness to changing and uncertain external conditions. Significant management inefficiencies, however, have inevitably built up during this first and necessary phase of the Program. These inefficiencies will constrain strategy achievement unless the Program makes the transition from the start-up and rapid growth phase to one of systematic consolidation and integration. Senior management demonstrated open and high commitment to the kinds of management and organizational reforms proposed during the review. Prospects for successful management and operations are encouraging, given the caliber of and team spirit among Program staff, in turn making possible a frank and constructive presentation of interim findings of the review.

4.2 Analysis and Publication of Two Years of Orangutan Nest Survey Data

Over the course of two years, the Conservancy carried out 108 different orangutan surveys in 22 distinct sites, counting over 10,000 orangutan nests, in an attempt to quantify the population and qualify their habitat. Secondly, we were interested to know what anthropological and environmental factors influence orangutan densities, and thus, also recorded the number of figs, lianas, large trees (> 40 cm DBH), and stumps in a series of plots during the nest survey. Dr. Andrew Marshall of Harvard University was contracted to analyze this data. Orangutan densities were uncorrelated with altitude, fig density, or any other ecological measure. Multivariate analyses demonstrated that densities were not affected by logging intensity or the distance to the nearest village, but were significantly correlated with the distance from the nearest village known to hunt orangutans (Fig 2). These results indicate that provided hunting is absent, lightly to moderately degraded forests retain high conservation value for orangutans. Explicit incorporation of degraded areas into management plans for orangutan populations would substantially increase the size of populations that could be protected, and thereby improve their chances for long-term survival.

A draft publication of this research has been submitted to Biological Conservation and the East Kalimantan Program has begun to disseminate this information to provincial and local governments so that they put value in logged over lowland forests.

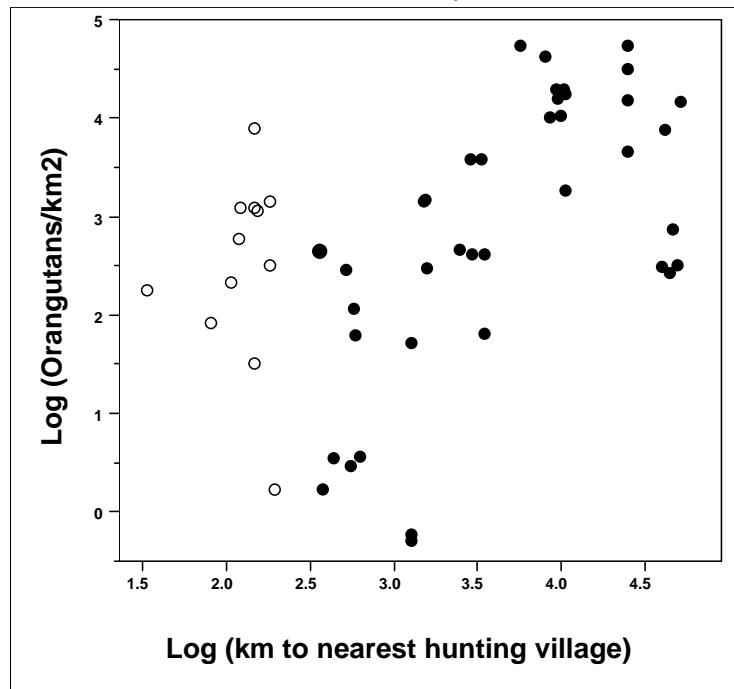


Figure 2 Orangutan density vs distance from nearest hunting village
The relationship between orangutan density (individuals/km²) and the distance (km) from the nearest village known to hunt orangutans (all midlines: n = 51, $\rho = 0.51$, $p = 0.0001$; all non-karst midlines: n = 39, $\rho = 0.61$, $p < 0.0001$). Open circles indicate karst midlines, closed circles indicate all other midlines (source: Marshall et al, in review)

4.3 Threats Analysis for East Kalimantan

Dr. Doug Fuller was contracted to produce a threats analysis layer that would help to guide the development of our conservation strategies. Twelve variables were identified as threats and then a composite score was assigned (see Appendix for list of variables). The variable that had the most impact on threat levels was determined to be access to the site, even above biological and physical factors such as fire frequency and percent tree cover.

Given the above conclusion, the Lesan Protected Forest had a much higher composite threat score than the Wahea Protected Forest since access is much easier to the Lesan. This conclusion gave further importance to our strategy of collaborative management with emphasis on heavily involving the surrounding villages on the Lesan River.

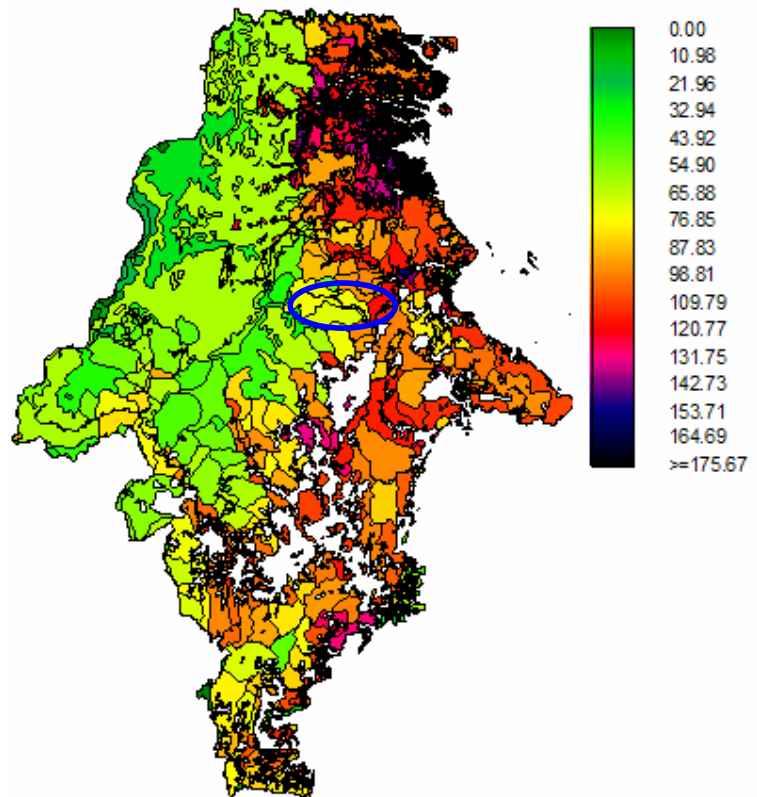


Figure 3 Mean target threat score with access weighted more heavily than 11 other variables. Darker color indicates higher threats. Blue circle indicates upper Kelay Watershed with Low to moderate threat

V. LESSONS LEARNED

After more than three years of operating in East Kalimantan, certain broad lessons can be drawn. First, our overall approach has been successful in engaging local resource users to actively participate in conservation. Management Councils have been established for the Lesan in Berau and for Wahea in East Kutai and these Councils are primarily composed of local government officials and villagers. Also important is that the local resource users see and/or perceive of clear benefits from the Program. In the case of local government, we seconded a GIS expert to their office and immediately provided training on various topics that they requested. Also, more importantly, we have treated the BAPPEDA and Forestry Officials as partners, involving them directly in discussions with villagers and field work, including the decision making progress.

For communities on the upper Kelay River, we've learned various lessons. First, providing clear benefits to villagers from the health program, clean water initiative, revolving loan fund, and participatory mapping accelerated the creation of an enabling environment. Clearly seeing and feeling these benefits for communities is even more important in the context of timber concessions operating at the fringe of the law. We had suspected that despite our best attempts at collaborating with all the concessionaires on the Kelay some would see the Conservancy as a threat and may try and provoke either the villagers or local government to stop our operations. We know of two cases where concessionaires did request that the Bupati stop Conservancy activities on the Kelay, and in both cases, he refused citing the many benefits that TNC has provided there.

In regard to implementing field activating, comparing two different activities serve as a lesson learned. The first activity is the health program that we undertook in close collaboration with the local Health Department Office and in partnership with CORI (Balikpapan-based health NGO) and Dr. Robbie Ali (Fellow at the Harvard School of Public Health). The health initiative had the necessary technical support and political support. As an example, before TNC began this initiative there were no health posts on the upper Kelay area and no trained health workers visited the area. However, after we began the program of training health volunteers, the Health Department built five health posts and allocated six nurses there. By the end of the this year, they will fully take over all health activities and the Conservancy will no longer need to allocated funds for this initiative. In contrast to the above lesson of engaging key organizations that offer technical support, we began a revolving loan fund on a trial basis in two villages (Long Gi and Lesan Dayak) with no other support. TNC staff were not trained in this activity and thus had to receive training first. Additionally, establishing the Revolving Loan Committee and the oversight mechanisms took up an inordinate amount of staff time. For those reasons, we are now engaging a NGO that specializes in establishing village credit unions to take over this initiative.

VI. CONCLUSION

There were three major objectives from the USAID proposal and these objectives were structured to coincide with the key resource users in Berau. The Conservancy has tangibly demonstrated that we've met two of the three objectives and Dayak communities and local government support and actively participate in conserving two newly created and locally managed protected areas. These accomplishments are most noteworthy given the context of decentralization and almost total lack of law enforcement concerning illegal logging that led to rapid exploitation of Kalimantan's natural resources.

The objective dealing with timber concessions has not yet been met. However, we are focusing our efforts at what we've determined to be the most cooperative of the five concessions on the upper Kelay Watershed and anticipate that we will reach an agreement that accommodates and reduces impact to orangutan habitat outside of the two new protected areas.

USAID has provided a total of \$935,503 to support this initiative and has agreed to provide funding for an additional two years to consolidate the accomplishments made to date. The Conservancy has been able to leverage the USAID's support to obtain additional funding of \$1.2 million for activities that compliment and strengthen the proposal objectives such as health, clean water, revolving loan fund, and establishing a NTFP cooperative. This integrated approach based on providing clearly perceived benefits for conservation can serve as a model for many other locations throughout Indonesia.

VII. ACKNOWLEDGEMENT

The Nature Conservancy wishes to thank USAID Indonesia Mission, especially Dr. Anne Patterson for her support over the last three years. Furthermore, Pak Ketut Djati has provided advice and support for the Program from the beginning, and we are most appreciative. Additionally, Dr. Cary Yeager provided advice and enthusiastic support for implementing this grant.

The Conservancy also wishes to acknowledge the excellent collaboration and support from World Education, especially from Sue O'Farrell and Matt Zimmerman. World Education is our partner implementing agricultural extension activities on the upper Kelay Watershed, and the level of integration between the two organizations can serve as a model for other sites.